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(54) Pot Cover and Apparatus and Method for Making the Same

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(57) 35 Claims

5,083,9/95

Notice: This application is as filed and may therefore contain an incomplete specification.



2106946

POT COVER AND APPARATUS AND METHOD FOR MAKING THE SAME

ABSTRACT OF THE DISCLOSURE

A pot cover is made by an apparatus provided for forming the pot cover from a resilient preformed water-tight liner having a bottom and a sidewall, a flexible sheet of material, and adhesive located between the sheet and the liner for adhering the sheet to the liner. The apparatus includes a rigid panel having a template-shaped aperture that is sufficiently large to receive the liner but which is sufficiently small to press the flexible sheet against the liner sidewall as the liner and flexible sheet are forced simultaneously through the template-shaped aperture. The apparatus further includes a plunger having an enlarged end approximating the size the liner bottom. In one form the enlarged end is shaped so that the liner sidewalls are supported as the liner is pressed through the template-shaped aperture, whereby the pot covers can be efficiently made by forcing a liner and a sheet simultaneously through the aperture by use of the plunger. A pot cover and method of making the same using such apparatus is also provided.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

-1-

An apparatus for forming a pot cover from a resilient preformed liner having a bottom and a sidewall, a flexible sheet of material, and adhesive located on one of the sheet and the liner for adhering the sheet to the liner, comprising:

5 a rigid panel having material forming an aperture and means for holding said panel while a pot cover is pressed through said aperture, said material being adapted to press the flexible sheet against the liner sidewall as the liner and the flexible sheet are forced through said aperture; and

10 a plunger having a mandrel-shaped end shaped to engage the liner bottom such that said plunger can press the liner through said enlarged aperture, whereby the pot cover can be formed by forcing a liner and a sheet simultaneously through said aperture by use of said plunger.

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An apparatus as defined in claim 1 wherein said rigid panel includes a plurality of rigid fingers extending inwardly into said aperture, said rigid fingers being adapted to engage and press the sheet into contact with the liner when the liner is forced through said aperture.

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An apparatus as defined in claim 2 wherein said rigid fingers extend inwardly to define a diameter larger than said plunger mandrel-shaped end and the liner bottom, but smaller than a diameter defined by the top of the liner sidewalls.

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An apparatus as defined in claim 3 wherein said plunger includes a handle connected to said mandrel-shaped end.

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An apparatus as defined in claim 4 including a return mechanism attached to said handle for returning said plunger in a reverse direction through said aperture after said plunger has been used to press a particular liner and sheet through said aperture.

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An apparatus as defined in claim 5 wherein said return mechanism includes a resilient member attached to said handle.

-7-

An apparatus as defined in claim 1 wherein said aperture is template-shaped and defines a diameter larger than said plunger mandrel-shaped end and the liner bottom, but smaller than a diameter defined at the top of the liner sidewalls.

-8-

An apparatus as defined in claim 1 wherein said plunger includes a handle connected to said mandrel-shaped end, and further including a return mechanism attached to said handle for returning said plunger in a reverse direction through said aperture after said plunger has been used to press a particular liner and sheet through said aperture.

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An apparatus as defined in claim 8 wherein said return mechanism includes a resilient member attached to said handle.

-10-

An apparatus as defined in claim 1 wherein said mandrel-shaped end of said plunger has a frusto-conical shape that substantially fills the interior of said liner.

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An apparatus as defined in claim 1 wherein said aperture defines an innermost diameter, and said mandrel-shaped end defines a shape having a first diameter substantially equal to the diameter of the liner bottom and having a second diameter approximating said

-10-

aperture innermost diameter.

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An apparatus as defined in claim 1 wherein said aperture includes a geometrically-shaped perimeter.

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A process for forming a pot cover comprising:

providing a rigid panel having an aperture located therein, a plunger having an enlarged end adapted to fit through said aperture, and a source of adhesive;

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providing a flexible sheet of material, a resilient preformed liner, and

adhesive;

positioning the flexible sheet over the aperture on the rigid panel;

selectively applying the adhesive to the flexible sheet;

placing the liner on the flexible sheet over the aperture; and

pushing the liner and the flexible sheet simultaneously through the aperture

10

with the plunger so that the flexible sheet is formed around the liner and adhered to the liner.

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A process as defined in claim 13 including stacking a plurality of the pot covers in the nested arrangement to facilitate shipment and storage.

-15-

A process as defined in claim 13 including returning the plunger through the aperture after the step of pushing the liner through the aperture with the plunger.

-16-

A process as defined in claim 15 including providing a resilient return member attached to the plunger, and wherein the step of pushing stretches the resilient member and

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the step of returning is provided by the residual elastic force in the stretched resilient member.

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A process as defined in claim 13 including attaching a patch to the flexible sheet after the step of pushing the liner through the aperture, the patch comprising a material adapted to securely releasably retain a bow thereto.

-18-

A process as defined in claim 13 wherein the step of pushing the liner and the flexible sheet through the aperture includes incompletely pressing the flexible sheet against the liner so that billowy folds are formed by the flexible sheet around the liner.

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A pot cover comprising:

a resilient liner having a bottom and sidewall forming a receptacle adapted to receive a plant pot, said resilient liner being comprised of a resiliently flexible material having a preformed shape with sufficient stiffness to be self-supporting and with sufficient
5 resiliency to return to said preformed shape if deformed;

a flexible sheet of decorative material formed around said liner bottom and sidewall; and

adhesive securing said flexible sheet to said sidewall.

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A pot cover as defined in claim 19 wherein said sidewall defines an open end having a diameter larger than that of said bottom, whereby a plurality of said pot covers can be nested inside one another to facilitate dense packing for shipping, the nested arrangement providing a stiff but light-in-weight package which resists deformation and which can be later
5 reformed without damage if accidentally crushed.

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A pot cover as defined in claim 20 including a patch attached to said flexible sheet, said patch comprising a material adapted to securely releasably retain a bow thereto.

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A pot cover as defined in claim 21 including a bow having a second patch thereon, said first and second patches being made of mating hook-and-loop materials adapted for secure for releasable engagement.

-23-

A stack comprising a plurality of pot covers as defined in claim 22, said plurality of pot covers being nested in a dense arrangement to facilitate shipping.

-24-

A pot cover as defined in claim 20 wherein said flexible sheet includes material forming a plurality of folds located proximate said liner sidewall, some of the material forming said folds being adhered to itself by said adhesive and other of the material forming said folds being adhered to said sidewall by said adhesive.

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A pot cover as defined in claim 24 wherein still other of the material forming said folds being unattached and defining pockets of air between the material and said liner sidewall, thus creating a billowy effect.

-26-

A pot cover as defined in claim 20 wherein said liner defines a water-tight receptacle adapted to receive a plant pot.

-27-

A process for forming a pot cover comprising:
providing a preformed liner, a flexible sheet of decorative material, and
adhesive;

-13-

supporting the preformed liner in an inverted position;
5 applying the adhesive to the preformed liner;
positioning the flexible sheet on the supported preformed liner;
providing a sleeve for pressing the flexible sheet onto the supported preformed
liner; and
advancing the sleeve onto the supported preformed liner to press the flexible
10 sheet onto the supported preformed liner to thus adhere the flexible sheet to the supported
preformed liner.

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A process as defined in claim 27 including providing a second of said
preformed liners, and including using said second liner as said sleeve to form said flexible
sheet onto said liner.

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A process as defined in claim 28 including removing said sleeve and using said
sleeve to form a later pot cover.

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A process as defined in claim 27 including providing a mandrel and wherein
said step of supporting the preformed liner includes positioning said liner on said mandrel.

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A process as defined in claim 30 wherein said mandrel includes one or more
of said preformed liners.

-32-

An apparatus for forming a pot cover, the pot cover including a preformed
liner, a flexible sheet positioned around the preformed liner and adhesive for adhering the
flexible sheet to the preformed liner, comprising:

-14-

5 a mandrel adapted to receive and support the preformed liner, said mandrel being shaped to support the preformed shape of the liner; and

a sleeve adapted to form the flexible sheet around the liner and press the flexible sheet into engagement with the preformed liner so that adhesive located between the flexible sheet and the liner adheres the flexible sheet and the liner together.

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An apparatus as defined in claim 32 wherein said sleeve includes one of said preformed liners, which one preformed liner does not form a part of the pot cover being formed, but which one preformed liner used in forming a pot cover at a later time.

-34-

An apparatus as defined in claim 33 wherein said mandrel includes one or more of said preformed liners, which one preformed liner does not form a part of the pot cover being formed, but which one preformed liner can be used in forming a pot cover at a later time.

-35-

An apparatus as defined in claim 32 wherein said mandrel includes one or more of said preformed liners, which one preformed liner does not form a part of the pot cover being formed, but which one preformed liner can be used in forming a pot cover at a later time.

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POT COVER AND APPARATUS AND METHOD FOR MAKING THE SAMEBACKGROUND OF THE INVENTION

The present invention relates to an apparatus and process for making pot covers, and more particularly an apparatus and process including features and steps
5 facilitating assembly of the pot covers for later shipment. The present invention further includes an improved pot cover adapted to facilitate the process of preassembling, shipping and handling the pot covers.

A number of different apparatus and processes are known for making pot covers to aesthetically cover a potted plant or flowerpot. However, many of these pot covers
10 lack self-supporting structure or, alternatively, are rigid and breakable, and thus are likely to be crushed and/or damaged in shipment. To overcome these problems, many pot covers are designed specifically for point of sale or use assembly. However, point of sale or use assembly is not always desirable since the quality of the pot covers may be comprised. Further, the apparatus for assembly may be expensive to purchase and the process of
15 assembly may be more time consuming than desired, particularly at retail locations that are not set up for such assembly and which do not have room in a convenient location for such an apparatus. Still further, many apparatus are more complex than desired and include parts which wear or are easily damaged. Thus, an apparatus and process for making pot covers solving the aforementioned problems is desired.

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SUMMARY OF THE INVENTION

In one aspect, the present invention includes an apparatus for forming a pot cover from a resilient preformed liner having a bottom and a sidewall, a flexible sheet of material, and adhesive located on one of the sheet and the liner for adhering the flexible
sheet to the liner. The apparatus includes a rigid panel having an aperture sufficiently large
25 to receive the liner but being sufficiently small to press the flexible sheet against the liner sidewall as the liner and flexible sheet are forced through the aperture. The apparatus also

includes a plunger having a mandrel-shaped end shaped to engage the liner bottom whereby the pot cover can be formed by forcing the liner and the sheet simultaneously through the aperture by use of the plunger.

In another aspect, the invention includes a process for forming a pot cover.

5 The process includes providing a rigid panel having an aperture located therein, and a plunger having a mandrel-shaped end adapted to fit through the aperture. The process also includes providing a flexible sheet of material, a resilient preformed liner and a source of adhesive. The process includes positioning the flexible sheet over the aperture on the rigid panel, selectively applying the adhesive to either the flexible sheet or the liner, placing the
10 liner on the flexible sheet over the aperture, and pushing the liner through the aperture with the plunger so that the flexible sheet is formed around the liner and adhered to the liner.

In another aspect, the present invention includes a process for forming a pot cover including providing a preformed liner, a flexible sheet of decorative material, and adhesive. The process includes supporting the preformed lining in an inverted position,
15 applying adhesive to the preformed lining, and positioning the flexible sheet on the supported preformed liner. The process further includes providing a sleeve for pressing the flexible sheet onto the supported preformed liner, and advancing the sleeve onto the supported preform liner to cause the flexible sheet to adhere to the supported preform liner.

In another aspect, the present invention includes an apparatus for forming a
20 pot cover, the pot cover including a preformed liner, a flexible sheet positioned around the preformed liner, and adhesive for adhering the flexible sheet to the preform liner. The apparatus includes a mandrel adapted to receive and support the preformed liner, the mandrel being shaped to support the preformed shape of the liner, and a sleeve adapted to form the flexible sheet around the liner and press the flexible sheet into engagement with the
25 preformed liner so that the adhesive located between the flexible sheet and the liner adheres same together. In one aspect, the mandrel and, separately, the sleeve include preformed

liners, which liners do not form a part of the pot cover being formed, but which liners can be used in forming a pot cover at a later time.

In another aspect, the invention includes a pot cover made from a resilient liner, a flexible sheet of decorative material formed around the liner, and adhesive securing the flexible sheet to the liner. The liner includes a bottom and a sidewall forming a receptacle adapted to receive a plant pot, the resilient liner being comprised of resiliently flexible material having a preformed shape with sufficient stiffness to be self-supporting and with sufficient resiliency to substantially return to the preformed shape if deformed. In one aspect, the liner sidewall is frusto-conically shaped to facilitate stacking in a nested arrangement, which nested arrangement has sidewalls that reinforce each other so that the combined effect is mechanically relatively stiff but that also has a flexibility sufficient to resist damage during shipment. In another aspect, a patch of hook-and-loop material is attached to the side of the flexible sheet adjacent the liner sidewall, the patch being useful for later attachment of a bow thereto.

An object of the present invention is to provide an apparatus and process that allows quick and efficient assembly of pot covers. Further, the decorative pot covers of the present invention can be nested for compact shipment, the pot covers being resilient such that they hold their shape but being resiliently deformable such that they are not broken or damaged during shipment.

These and other features, advantages and objects of the present invention will be further understood and appreciated by those skilled in the art by reference to the following specification, claims and appended drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective view of a pot cover embodying the present invention;

Fig. 2 is an exploded perspective view of the pot cover shown in Fig. 1;

Figs. 3-5 are perspective views of an apparatus and process embodying the present invention;

Fig. 6 is a perspective view of a modified apparatus embodying the present invention; and

5 Fig. 7 is an exploded perspective view of a modified process and apparatus for forming the pot covers embodying the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

A pot cover 20 (Figs. 1-2) embodying the present invention includes a resilient liner 22, and a flexible sheet 24 wrapped around liner 22 and adhered thereto by adhesive
10 26. A bow 28 is attached to pot cover 20 by a pair of patches 30 and 32, patches 30 and 32 being made of a hook-and-loop material and being attached to bow 28 and pot cover 20 respectively. This combination is well suited for assembly prior to shipment, as discussed below.

Liner 22 (Fig. 2) includes a bottom 36 and a sidewall 38 forming a water-tight
15 receptacle. Liner 22 is made of a flexible material such as polypropylene having a material thickness of about 0.2 to 0.5 mm, although different thickness materials can be used. A ridge 39 is fashioned near the top of sidewall 38 for increased strength. Sidewall 38 forms a frusto-conical shape adapted to receive a flowerpot or the like (not shown). The sidewall 38 has a smaller diameter D1 at the bottom and a larger diameter D2 at the top, thus forming
20 the frusto-conical shape. This allows multiple pot covers 20 to be stacked in a nested arrangement. Notably in the nested arrangement, sidewalls 38 resiliently support each other and also bottoms 36 resiliently support the sidewalls such that the nested arrangement can be handled and thus shipped without fear of crushing or unacceptably damaging the nested arrangement.

25 Flexible sheet 24 is a thin polypropylene sheet material of about 0.02 to 0.03 mm thickness or less, although various thicknesses and materials can be used. The

outer surface of sheet 24 is colored, treated, and/or printed with a design for aesthetics. The peripheral edge 40 of sheet 24 can be shaped as desired, the illustrated shape 40 being a scalloped circular shape. Flexible sheet 24 is adhered to liner sidewall 38 and bottom 36 by an adhesive 26, but sidewall 38 is not pressed completely flat against sidewall 38 per se

5 during the assembly process, such that decorative folds 41 are formed in flexible sheet 24 which are slightly puffy or billowy in appearance. Potentially, air can be trapped between sidewall 38 and flexible sheet 24, although this need not be the case. Also, folds 41 tend to be randomly positioned around sidewall 38. The size of flexible sheet 24 can be varied as desired depending upon how far one desires to extend sheet 24 above liner sidewall 38.

10 Bow 28 is made of a ribbon wrapped back-and-forth to the shape desired. Patch 30 is secured to the base of bow 28 mechanically or by an adhesive. Advantageously, bow 28 can be shipped separately from pot cover 20. This allows a customer to select a particular bow 28 as desired at the retail site. Further, the hook-and-loop materials provide for secure and quick attachment of bow 28 to pot cover 20.

15 An apparatus 50 (Figs. 3-5) is adapted to manufacture pot covers 20. Apparatus 50 includes a table 52 and a plunger 54. Table 52 includes a planar top 56 made of a sheet of plywood or similarly rigid material. Legs 58 are connected to top 56 to support top 56 in a raised position thus creating a space below table top 56 for receipt of assembled pot covers 20. A template-shaped aperture 60 is formed in the center of top 56. Aperture

20 60 is defined by a marginal edge that includes a plurality of fingers 64 protruding inwardly (Fig. 5). At least the tips of fingers 64 are sanded and shellacked or otherwise treated to reduce friction with flexible sheet 24. Fingers 64 assist in distributing folds 41 generally uniformly about pot cover 20, although as previously noted individual folds 41 are randomly formed. The diameter defined by the tips of fingers 64 is about equal to top diameter D2,

25 but it is at least as large as bottom diameter D1. Apparatus 50 further includes an applicator or source 66 of adhesive 26. It is contemplated that adhesive 26 will be a sprayable

industrial adhesive such as that sold by Crown Company, Stock No. 8091, which is a heavy-duty quick drying commercial adhesive intended for permanent adhesion.

Plunger 54 has an enlarged end 55 adapted to fit within liner 22 against liner bottom 36, and further includes a handle 55' that extends from enlarged end 55. Enlarged end 55 extends less than the height of liner sidewall 38, although it is contemplated that enlarged end 55 could fully fill liner 22. It is contemplated that enlarged end 55 will be made of a stiff material, although a resilient material could also be used, and that enlarged end 55 will be about one to two inches in diameter smaller than aperture 60. If desired, an elastic band or spring 70 (Fig. 5) can be attached to the end of handle 55' to automatically return plunger 54 back through aperture 60 after forming a pot cover, as described below.

The process of forming pot cover 20 by use of apparatus 50 includes the following steps. Initially, flexible sheet 24 is positioned on table top 56 centrally over template-shaped aperture 60. Adhesive 26 is applied by use of applicator 66 to flexible sheet 24 over the area of template-shaped aperture 60 and about halfway to peripheral edge 40. The adhesive 26 is applied to flexible sheet 24 close enough to peripheral edge 40 so that the adhesive will contact the upper edges of liner sidewall 38 when flexible sheet 24 is wrapped around liner 22. Liner 22 is then placed on flexible sheet 24 over template-shaped aperture 60.

Plunger enlarged end 55 is then positioned in liner 22 (Fig. 4). An operator grasps handle 55A' and presses plunger enlarged end 54 through template-shaped aperture 60 thus forcing the assembly of liner 22 and flexible sheet 24 also through template-shaped aperture 60. As liner 22 and flexible sheet 24 pass through template-shaped aperture 60, flexible sheet 24 forms random folds 41 (with assistance of fingers 64) such that flexible sheet 24 adheres (Fig. 5) against itself and also against liner 22. Since the tips of fingers 64 form a diameter about equal to top diameter D2 of liner sidewall 38, at least the material of flexible sheet 24 near the top of liner 22 is pressed against liner 22 with sufficient force such

that the adhesive 26 securely retains flexible sheet 24 against liner sidewall 38. Also, as liner 22 and flexible sheet 24 pass through aperture 60, the material forming the top of liner 22 exhibits a force of resistance against fingers 64. It is contemplated that the top of liner 22 will bend inwardly if this force becomes too great. Still further, the force of resistance as flexible sheet 24 slides over fingers 64 and through template-shaped aperture 60 creates a tension on liner sidewall 38 causing folds 41 to form. Thus, by controlling the size of plunger enlarged end 55, the size of template-shaped aperture 60 and the number of fingers 64, the angle of the frusto-conically shaped liner sidewall 38, and related variables, the shape and number of folds 41 can be somewhat controlled.

The subassembly of pot cover 20 can then be completed by adhering patch 32 to an outside of pot cover 20 on flexible sheet 24. With or without patch 32, pot covers 20 can be nested into each other to provide dense packing for efficient shipping. Notably, the nested arrangement of pot covers provides a relatively stiff and structurally rigid combination due to the stiffness of liner bottom 36 and liner sidewalls 38. However, though relatively stiff, the stack of pot covers can be deformed without damage and will later resiliently deform back to their original shape. It is also noted that the weight of the nested arrangement is low, thus being conducive to handling and shipping.

A modified plunger 54A is illustrated in Fig. 6. Plunger 54A includes an enlarged frusto-conically shaped end 55A adapted to fill the inside volume of liner 22 so that it supports liner sidewalls 38. Thus, when plunger 54A is used, liner 22 cannot accidentally collapse inwardly in a manner that adversely affects the adhering of flexible sheet 24 to liner 22.

A modified process for forming pot covers 20 is shown in Fig. 7. In the modified process, an inverted frusto-conically shaped mandrel 70 is positioned in an inverted upwardly facing position. Mandrel 70 is shaped to fully fill the inside volume of liner 22, such that the liner bottom 36 and sidewalls 38 are supported and cannot collapse. A liner 22

is placed on mandrel 70 and adhesive 26 is applied to the outside thereof, such as by spraying, wiping, or other known means for applying adhesive. Flexible sheet 24 is then positioned on liner bottom 36, and a second liner 22' (not forming a part of the present pot cover 20 being formed) is used to press flexible sheet 24 downwardly around liner 22 and into engagement with liner sidewall 38. It has been found most efficient to use a single liner 22 on mandrel 70, and a single second liner 22', however a stack of liners can be used in either of these places. In some situations it is contemplated that mandrel 70 can be replaced with a stack of liners 22, such as where the stack of liners 22 have sufficient stiffness to allow same.

Thus, a pot cover, and an apparatus and a process of forming the pot cover are provided, each being relatively non complex and efficiently manufacturable. The pot cover includes a resilient liner, and a flexible sheet adhered to the liner by adhesive, the pot cover being adapted for stacking in a nested arrangement which is stiff but resilient such that shipping damage is minimized. The apparatus includes non-complex and low cost components including a table with a template-shaped aperture therein and a plunger for pressing pot covers through the template-shaped aperture to form the pot covers. The process of using the apparatus to form the pot covers includes positioning a flexible sheet over an aperture, applying adhesive to the flexible sheet, positioning a liner thereon, and pushing the flexible sheet and liner through the aperture with a plunger.

From the foregoing description, it will be readily appreciated by those skilled in the art that modifications may be made to the invention without departing from the concepts disclosed herein. Such modifications are to be considered as included in the following claims, unless these claims by their language expressly state otherwise.

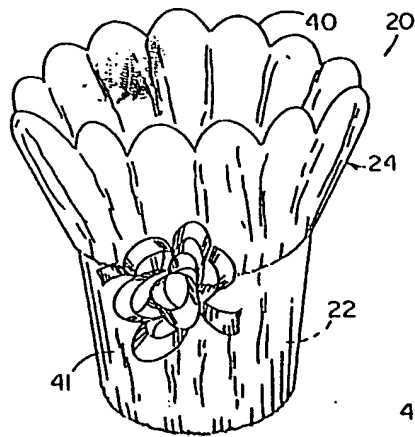


FIG. 1

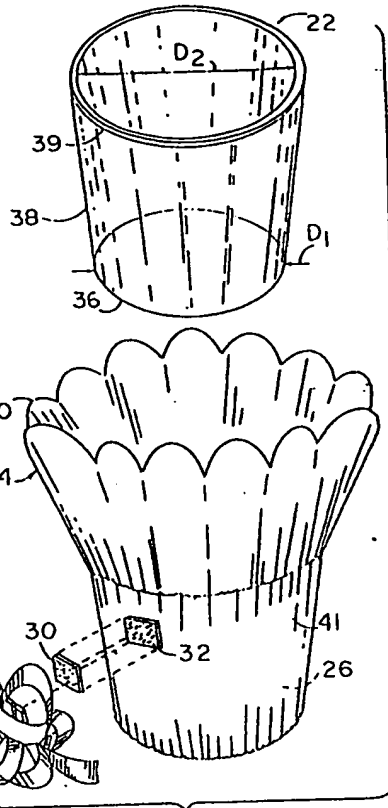


FIG. 2

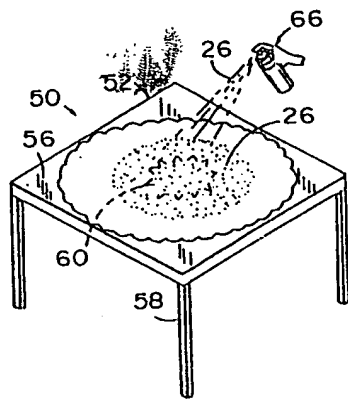


FIG. 3

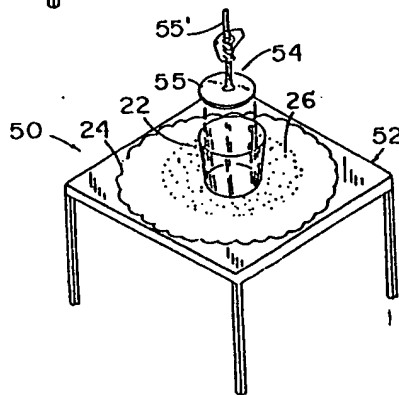


FIG. 4

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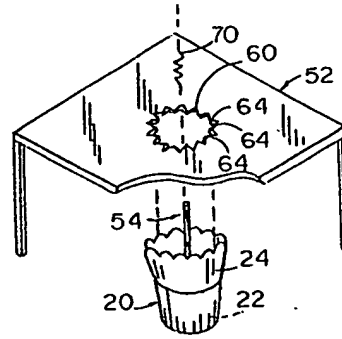
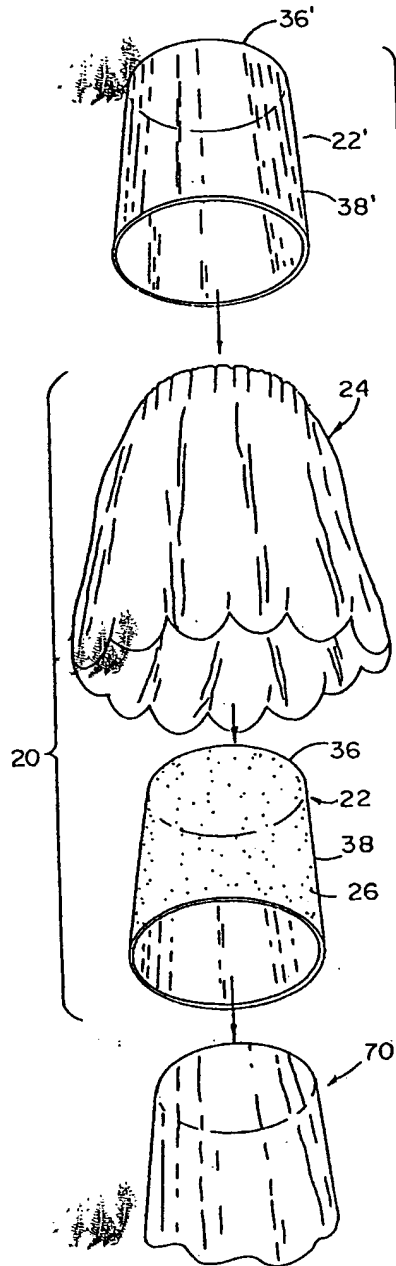


FIG. 5

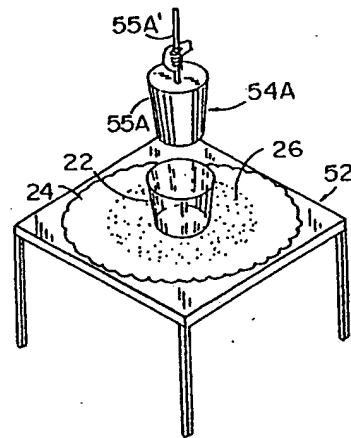


FIG. 6

FIG. 7

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